"Nude" mouse (photo credit: Brian Chan)

In a paper at the interface of ecology and immunology, Lars Råberg and colleagues (Jacobus C. de Roode, Andrew S. Bell, Panagiota Stamou, David Gray, and Andrew F. Read) investigate how the immune system contributes to competition by comparing the extent of competition between two strains of the rodent malaria parasite Plasmodium chabaudi in mutant immuno-deficient mice with that in immuno-competent mice. The results showed that competition was less intense in immuno-deficient than in immuno-competent mice. Thus, competition is partly mediated by the host's immune response. Moreover, this immune-mediated competition only affected the less virulent strain, giving the virulent strain an advantage. This implies that our immune system, which has evolved to protect us against infectious disease, also favors more virulent parasites. It also suggests that vaccination may enhance competition between parasite strains in a host and thereby unintentionally select for more virulent parasites.

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